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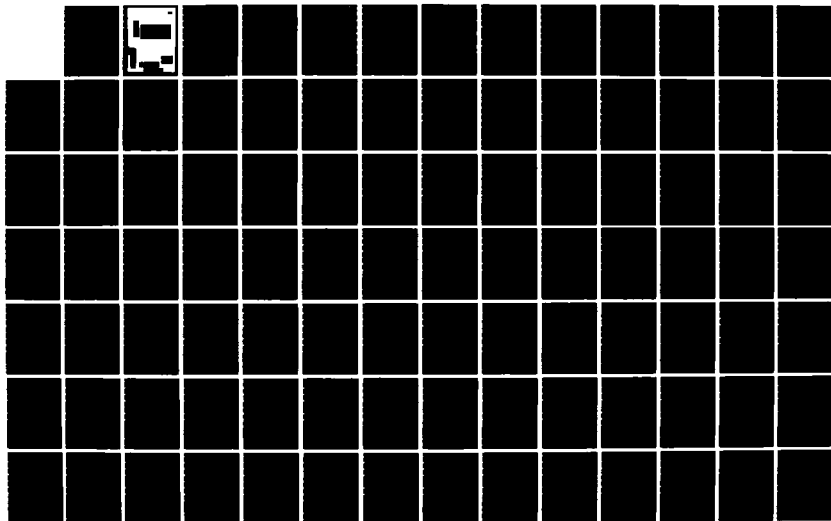
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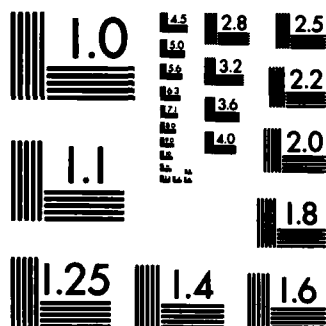
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Working Paper Series A

Organizational Behavior

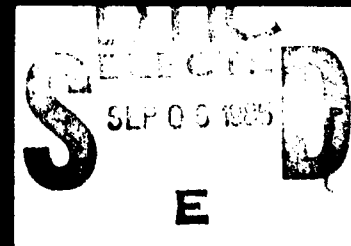
Measuring Managerial Potential and Intervening
to Improve the Racial Equity of Upward
Mobility Decisions

Clayton P. Alderfer
Robert C. Tucker

Working Paper #68

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Measuring Managerial Potential and Intervening to Improve
the Racial Equity of Upward Mobility Decisions *

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Working Paper Series A

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It is a guiding, nudging, orchestrating job requiring bold, quick action mingled with subtle and convoluted processes. Effective management requires both ends of the continuum: the ability to act on limited information and instinct to isolate and contain, and the ability to shepherd convoluted processes to a satisfactory conclusion.

Morgan McCall and Robert Kaplan, 1985, p. 83

We have progressed, but in some ways it's been like throwing a dog a bone... Black managers still lack the level of influence, money, and perks [that white managers have attained]. The next step is upward mobility, board seats, and salaries comparable to those of whites.

Donald Murphy, 1984, p. 20

Introduction

After years of searching for single and unambiguous indicators, researchers increasingly conclude that the quest for measures of managerial leadership remains elusive. Closer and closer studies of what managers actually do provide pictures that are ever more complex (Mintzberg, 1973; Lombardo, 1978). Reluctantly, more investigators are accepting the notion that assessing managerial effectiveness is a highly subjective undertaking that calls for multiple dimensions, varying time spans, and diverse perspectives.

For the last 20 years, predominantly white organizations in the United States have been coping with processes of including and promoting black managers. According to the federal Equal Employment Opportunity Commission, the number of blacks holding jobs classified as "managers and officials"

increased from 2.4% in 1972 to 4.3% in 1982. As a result, 174,003 blacks held jobs as managers and officials by 1982; this represents an increase of 135.8% during the preceding ten year period (Newsweek, February 20, 1984, p. 104). Bringing more black people into management positions, however, is not equivalent to assigning them to jobs of equal centrality and influence as those held by whites. The allocation of tasks and responsibilities to black managers has often been carried out in ways that do not permit them to enter the mainstream of corporate life and to move upward in the corporate hierarchy (Davis and Watson, 1982).

Assessing the managerial potential of black and white employees and promoting the most promising to more responsible positions bring together two highly ambiguous and conflictual tasks. Without considerations of race, the assessment of management potential is a complex and difficult undertaking. When the subject of race is added to the question of who should be promoted, the resulting difficulties increase significantly.

— The present study brings together theory-method traditions that normally do not intersect: psychometric measurement and intergroup intervention. Scholarship about the measurement of management potential emphasizes statistical models and techniques, draws on a long historical tradition of inductive empirical generalizations, and remains comparatively free of theoretical explanations as to why the patterns of empirical findings emerge as they do. Landy and Farr (1980, p. 100) conclude an extensive review of performance ratings by saying,

Organismic characteristics such as the sex, race, or age of the rater are peripheral. The more important questions relate to how cognitive operations are affected by group membership... Since little is known concerning the dynamics by which demographic characteristics, such as race and sex, affect ratings it is difficult to imagine training programs that would eliminate specific biases peculiar to group membership.

Intergroup theory includes a set of concepts and propositions that address the issues that Landy and Farr (1980) identify. The framework also provides a substantive basis to understand and to change some of the problematic elements of management performance and mobility.

Intergroup theory has two major facets (Alderfer, 1985). The first contains concepts and propositions to explain steady states of intergroup relations in organizations. The second provides constructs and methods to predict changing states of race relations in organizations. We use both facets of the theory in the present research.

The paper proceeds according to three major sections with subdivisions within each. The first recasts the empirical literatures on managerial performance assessment and on upward mobility decisions in terms of intergroup theory. To do this, we review key concepts about steady states in intergroup theory and then use these propositions to increase the explanatory power that can be brought to the empirical literature. The second part describes the elements of a major organizational intervention program to improve the racial equity of upward mobility decisions. ~~To do this, we review~~ key concepts *as described* about changing race relations in organizations and show how the intervention program was designed directly from these ideas. The third section presents an empirical analysis of the data developed from the intervention program. This section examines the statistical properties of the measures of managerial potential developed for the intervention and traces the selection process through three phases of deliberations.

An Intergroup Perspective on Managerial Assessment and Upward Mobility Decisions

Intergroup theory provides concepts that help to explain multiple perspectives on measurement processes and to understand system-wide forces that shape the consequences of performance measurement. Landy and Farr (1980) write as if

training programs were the chief means to eliminate specific bias. In the process, they reveal belief that the chief route to reduce bias is through changing individuals. Their perspective becomes clear when they discuss implicit personality theory (Landy and Farr, 1980, pp. 96-98). Intergroup theory expands the picture to include not only individual but also group forces.

When mobility decisions are made in organizations, the processes are more complex than individuals acting independently. Collective phenomena are at work. Teams of people confer about their assessment of candidates, and groups of people negotiate with one another to determine who shall be promoted. This occurs, for example, when chief executives of a corporation present their recommendations about who should become vice presidents to boards of directors or when personnel committees of the military determine who in particular cohort shall be promoted to the next rank. These processes might be improved by training people to act in accord with what is known about the operation of individual cognitive processes. Individually based intervention, however, is not likely to affect the collective forces that influence evaluation and promotion decisions. Intergroup intervention, on the other hand, involves changing the racial composition of assessor groups and altering negotiation processes among different groups in the organization.

Steady State Concepts from Intergroup Theory. Intergroup theory distinguishes between organization groups and identity groups. Organization groups arise because people occupy similar hierarchical or functional roles and perform common tasks. Experiences occur from these activities. Incumbents learn that they encounter recognizable emotions, and they form cognitions to make sense of their experiences. Identity groups exist because individuals share biological characteristics that affect how they relate to the world. Because of race, gender, age, and family, people encounter a variety of recurring experiences with their environments. From these events emotions and cognitions

also follow. People change organization groups when they change organizations. They virtually never change race and gender. Age, of course, changes with the passage of time as does some aspects of family. The effects of organization group membership tend to be more transitory, and the consequences of identity groups tend to be more lasting.

The term group as used here means a collection of individuals (1) who have significantly interdependent relations; (2) who perceive themselves as a group by reliably distinguishing members from non-members; (3) whose group identity is recognized by non-members; (4) who have differentiated roles in the group as a function of expectations from themselves, other group members, and non-group members; and (5) who, as group members acting alone or in concert, have significantly interdependent relations with other groups and identity groups have these properties.

Every person is simultaneously a member of all her or his identity and organization groups, but the group he or she represents at any moment, however, depends on the intergroup context in which events occur. The intergroup context is determined by other individuals who are present representing other groups, by the permeability of groups' boundaries, power differences, affective patterns, cognitive formations, and leadership behavior of all the groups, and by the manner in which the groups and individuals are embedded in the surrounding social system. Thus, no one escapes the effects of these group forces whether he or she is a ratee, a rater, or a researcher working with ratees and raters.

The permeability of group boundaries determine group membership and regulate transactions among groups.

Power differences reflect the quality and quantity of resources that are available for use by groups and influence the permeability of group boundaries.

Affective patterns vary with the polarization of feeling among groups, reflect power differences among groups, and effect the permeability of group boundaries.

Cognitive formations -- the language, perceptions, and propositions -- held by group members evolve as a function of the permeability of group boundaries, power differences, and affective patterns and serve to help members explain their own experiences to one another and influence members of other groups.

The behavior of formally designated leaders and other group representatives reflects the boundary permeability, power differences, affective patterns, and cognitive formations of their own group in relation to other groups and is both cause and effect of the total pattern of intergroup relations in a situation (Alderfer and Smith, 1982). Each person representing a group is shaped by her or his unique personality, by the condition of her or his group in relation to other groups, and by her or his relationship to her or his own group.

Embeddedness of intergroup relations refers to interpenetration of group level effects across different units of analysis; it concerns how system and subsystem dynamics are effected by supra system dynamics and vice versa (Smith and Alderfer, 1982). One may observe embeddedness from the perspective of individuals in relation to one another, of subgroups within groups, of whole groups in relation to one another, of intergroup relations within organizations, etc. Regardless of which unit is the focus of attention, the phenomenon of interpenetration across levels will be operating. Individuals carry images of their own and other groups as they serve in representational roles. Subgroup splits within face-to-face groups reflect differing degrees of identification and involvement with

the group itself. These splits, in turn, reflect the group's relations to other groups in the system and to the larger system as a whole. The concept of embedded intergroup relations applies to both identity and to organization groups (Alderfer and Smith, 1982; Alderfer 1983).

A fundamental concept derived from intergroup theory is that the cognitive formations of a person evaluating a member of another group depend on the relationship between the two groups. The more conflictual the relationship between the groups, the more polarized the feelings of members of both groups. People will favor members of their own group and reject members of other groups, because members of their own groups -- often unconsciously -- encourage them to shape their perceptions in a manner that does not question the group level understanding. People who deviate risk their own membership in the group. The theory argues that these effects operate on individuals even without immediate group discussion. A life time of socialization by group forces is not lost when a person is working alone, for example, to complete a performance appraisal. In addition, group forces become even stronger when members of one group actually meet together to decide about members of another group. This is the situation when the membership of a personnel committee consists of people from one racial or ethnic group, and they are charged with deciding whether members of another group should be promoted.

Managerial Performance Rating. A portion of the literature on performance rating lends itself readily to interpretation through intergroup theory. On the matter of correlating ratings to determine their validity by people from different organization levels, Borman (1974, p. 106) says, [it] "seems unreasonable [because] raters from different levels have different orientations toward the job in question, and/or observe significantly different

ratee behavior." Moreover, he argues, "If people from different levels of an organization are [emphasis his] in positions to rate different dimensions of success... then a rating system should be designed to mirror this fact of life. Such a system would involve rating scales with at least partially different sets of dimensions for each organizational levels raters" (Borman, 1974, p. 108).

In his own empirical work, Borman studied secretaries from five academic departments. Both the secretaries and the instructors for whom they worked independently developed their own behavioral expectations scales (Smith and Kendall, 1963). Secretaries developed four useable scales, and the instructors formulated three useable scales. Borman had predicted that members of each occupational group would show higher agreement about performance rating when using their own scales than when using the other group's measures, and the results supported his prediction.

Interestingly, Borman showed little interest in the actual content of the different scales. He provides titles for the seven different scales. Job knowledge, organization, cooperation with co-worker, and responsibility were labels given to the secretaries scales, while technical competence, conscientiousness, and judgement were the terms given to the instructor's scales. His empirical results showed correlations between three instructor scales and three secretaries scales as follows:

<u>Instructor Scales</u>	<u>Correlation</u>	<u>p</u>	<u>Secretary Scales</u>
Technical Competence	.45	.01	Job Knowledge
Conscientiousness	.62	.01	Organization
Conscientiousness	.46	.01	Responsibility
Judgement	.32	.05	Job Knowledge

The secretaries' scale, Cooperation with Coworkers, showed no significant correlations with any of the instructors' scales.

Borman brought no explicit theory of groups and organizations to his innovative methodology for measuring job performance. As far as he went, however, his findings were highly consistent with intergroup theory. One might even say he brought a tacit understanding of intergroup dynamics to what on the surface appeared to be an essentially empirical-statistical study. Attention to intergroup concepts, however, brings additional interpretative power to Borman's (1974) results. Why, for example, did not the scale "Cooperation with Coworkers" appear in the instructors' set? Borman's empirical orientation might answer that this is an instance where instructors did not observe variations in cooperation among coworkers. Intergroup theory, however, enriches the answer to the question. Instructors have less opportunity to observe the degree of cooperation among secretarial coworkers because as non-members they are outside the group they are observing. Their group membership effect decreases their opportunity to experience the effects of more and less cooperation among the secretaries. In addition, there are also authority effects. According to university hierarchies, secretaries are lower ranking members than instructional staff. They thus tend to band together to protect themselves from the threatening gazes of the people above them (Smith, 1982). Furthermore, if one goes a step further, the relationship between secretaries and instructors -- perhaps especially in 1974 -- was probably also between women and men. The organization group boundary of job level that reduced the capacity of the instructors to observe was also correlated with the identity group boundary of gender. If there had been a significant proportion of women among the instructor group and a significant number of men

among the secretary group, then the odds of the instructors becoming attentive to the dimension of cooperation among co-workers would have increased, according to intergroup theory. If organization level became less correlated with gender, then within gender conversations about issues in the organization level groups would have the effect of increasing the instructors' opportunities to learn about the work experiences in the secretarial group. As a result, they would become more aware of the significance of co-worker cooperation and more likely to include it among their dimensions of performance.

Observe the words used to label the secretaries' scales and the instructors' scales. The terms technical competence, conscientiousness, and judgement are all highly evaluative words. Compare the words job knowledge, organization, responsibility, and cooperation. This second set are much more descriptive in their connotation. Only the term responsibility carries something of the same flavor of the instructors' scale names. Why this difference? Intergroup theory again calls attention to the authority differences between the groups. The hierarchical forces of the university organization call upon the instructors to look down upon the secretaries. The process of intergroup perception by the instructors is probably further magnified by instructors being predominantly men and secretaries being predominantly women (Taylor, 1981).

Finally, there is the situation of Borman, the researcher and author. By role and gender, he is closer to being a member of the instructor group. As a man and as a researcher, he would be closer to the instructors than to the secretaries. Intergroup theory applied to the investigator predicts that her or his group memberships influence: (1) information obtained for scales from members of the two groups, and (2) interpretations by the investigator of the groups and their relationship.

We carry out this detailed interpretation of Borman's (1974) work to illustrate how intergroup theory can be brought to bear in an arena that traditionally has been largely atheoretical, namely, psychological measurement. Because Borman (1974) went as far as he did based on a tacit intergroup understanding, he developed data that permitted even further intergroup analysis. In fact, there are extensive empirical literature reviews on performance ratings that readily lend themselves to intergroup interpretation by organization group analysis (Campbell, Dunnette, Lawler, and Weik, 1970; Kane and Lawler, 1978; Landy and Farr, 1980). All of this suggests explicit attention to organization group dynamics can enter managerial performance measurement from the outset, not just in a post hoc fashion.

A similar argument applies to the effects of racial group membership on performance ratings. Recently, Kraiger and Ford (1985) completed a meta-analysis of 84 studies of rater race effects in performance ratings. They found that white raters tended to give white ratees significantly higher ratings than black ratees. The average white ratee received a more favorable evaluation from white raters than 64% of the black raters. They also found that black raters tended to give black ratees significantly higher ratings than white ratees. The average black ratee received a more favorable evaluation from black raters than 67% of the white ratees. The cumulative sample size for white raters was 17,159 and for black raters was 2,428. Moreover, they also found that the effect of race differences decreased as the proportion of blacks in the ratee sample increased. The reviewers carefully note that their findings cannot separate actual performance differences from rater bias because every subjective rating includes components of both, which cannot be separated.

In accord with the traditions of measurement research, the reviewers make no use of intergroup theory to predict or to explain their results. Their major finding, however, follows directly from what one would predict from the concept of ethnocentrism. Members of both black and white racial groups assess members of their groups more favorably than they do members of the other racial group (Sumner, 1906; Levine and Campbell, 1976).

Beyond the effects of ethnocentrism, which can be observed for both racial groups, the reviewers go on to deal with the question of whether effects of actual performance differences can be inferred for field studies with white raters. Here they write,

Research on selection tests have shown that white applicants tend to score higher on a variety of preemployment ability measures (e.g., see Schmidt and Hunter, 1981). Therefore, the higher effect sizes for field studies (with white raters) may, in part, be a reflection of the differences found on the predictor measures... the evidence suggests that differential ratings are more likely due to some combination of bias and performance differences (Kraiger and Ford, 1985, p. 62).

This is a very interesting conclusion -- one that raises additional questions about the implicit concepts the reviewers are using. Are the reviewers aware that they are willing to say albeit somewhat indirectly that the tendency for white raters to give whites higher ratings than blacks has some basis in objective performance, but they are apparently not willing to make such a statement regarding blacks rating blacks higher than whites? They make this statement despite the fact that the corrected confidence intervals for the two classes of ratings are virtually indistinguishable (.02 to .35 for white raters; .03 to .41 for black raters) and the actual mean correlation for black raters is higher absolutely (.22 vs. .18) than for white raters. They seem to base their logic on the Schmidt and Hunter (1981) review. To determine the logic used by Schmidt and Hunter (1981) we turn directly to their work. They write:

... The most commonly accepted model of test fairness is the regression model... This model defines a test as unfair to a minority group if it predicts lower levels of job performance than the group in fact achieves... The theory of test unfairness is based on the assumption that the factors causing lower test scores do not also cause lower job performance. [emphasis ours]. The accumulated evidence is clear: Lower test scores among minorities are accompanied by lower job performance, exactly as in the case of the majority... This finding holds true whether ratings of job performance or objective job sample measures of performance are used... The small departures from perfect fairness that exist actually favor minority groups (Schmidt and Hunter, 1981, p. 1131).

The emphasized portion of the quotation indicates where apparently substantive theory-free psychometric interpretation encounters theory-based interpretation. The assumption cited by Schmidt and Hunter (1981) derives directly from psychometric theory: a causal interpretation of a statistical association between two variables is permissible only if the operation of "third variables" can be ruled out. Schmidt and Hunter (1981) are apparently comfortable in making the assumption that there are not third variables that cause both lower test performance and lower job performance among minorities. A person familiar with our version of intergroup theory could not hold their assumption comfortably, however. The obvious third variable is the racial composition of the groups who construct tests and the racial composition of the groups that affect and assess performance. On the average, these tend to be predominantly white groups. Moreover, the history of mental ability testing shows that these instruments were constructed at least as much to discriminate against unwanted racial and ethnic groups as they were to promote meritocracy (Gordon and Terrell, 1981; Sarason, 1981; Owen, 1983). If one accepts the concept of racism and recognizes that the effects often operate unconsciously, then the third variable to explain the association between test scores is identified. In fact, this way of thinking is so natural that on reading the Schmidt and Hunter (1981) sentence, we assumed that the writers were about to draw the same conclusion as we would. How could they make the statistical assumption

so clear and then not draw the obvious conclusion?!? But, of course, the conclusion is only "obvious" if there is an explicit theory that explains the empirical material.

In addition, the final sentence of the quotation says that tests "favor" minority groups. This comment eliminates any doubt about whether the authors saw the group level racism explanation for the observed association. Favor as they use the term means that the slope of the regression line is somewhat steeper for minority people than for whites. Intergroup theory also provides an explanation for this effect. Performance assessment of minority people by whites is known to be subject of "exception" effects (Taylor, 1981). Based on unconscious racist assumptions, whites expect minority people to perform poorly, so when there are performance problems this prophecy is fulfilled, and the intergroup forces exaggerate in the negative direction. The person is not just seen as performing poorly but is viewed as a bum, a sneak, an incompetent. In contrast, when a minority person does acceptably well, this is a violation of expectation in the positive direction. Rather than being viewed as doing well, the minority person is seen as being outstanding, exceptional, a "star;" exaggeration thus occurs in the favorable direction. The process by which these opposing tendencies lead to a steeper regression line can be seen by observing the equation for the slope of performance (y) on test scores (x).

$$b_{yx} = \frac{\sum_i (x_i - \bar{X})(y_i - \bar{Y})}{\sum_i (x_i - \bar{X})^2}$$

The effect of intergroup "exception effects" (both negative and positive) would be to increase the $(y_i - \bar{Y})$ term. There is no reason to think that

the $(x_i - \bar{X})$ term changes. The result, therefore, is a larger byx. If minority people get more credit and more blame than whites who show comparable actions, and the result is a slightly larger slope on their regression line, then the evaluation of these phenomena probably should not be called "favorable" to minority people.

Upward Mobility Decisions. Research on mobility decisions also lends itself to intergroup interpretation. In an interview study investigating the tendency to discriminate against Jews, Quinn, Tabor, and Gordon (1968) found that group pressure from two or more people operated independently of individual anti-semitism. The greatest tendency to discriminate against Jews was observed for individuals who both reported anti-Semitic feelings and experienced group pressure. But the second highest tendency to discriminate came from individuals without anti-Semitic attitudes who received pressure from two or more people to discriminate.

Nordlie (1979) examined the promotion rates of black and white enlisted people in the U.S. Army. He found that whites were promoted more rapidly than blacks, even when educational level was controlled. At every level of education, whites were promoted more rapidly than blacks. The study also examined the relationship between score on the Armed Services Qualifications Test and rate of promotion. For whites, scores on the test were positively related to rate of promotion; whites who received higher scores were promoted more rapidly. For blacks, scores on the test were negatively related to the rate of promotion; blacks who received lower scores were promoted more rapidly. Again, we see individual effects operating in combination with racial group membership. In this case, the effect appears to be highly irrational. Why would the Army promote blacks who had lower scores more

rapidly than those who had higher scores? The finding suggests that the predominantly white U.S. Army organization would prefer less qualified blacks in higher ranking positions.

Research on assessment centers also provides evidence about the operation of group level race and gender dynamics in the making of upward mobility decisions. Huck and Bray (1976) compared the correlations between assessment dimensions and ratings of job performance and potential for advancement for white women and black women. In this study, the authors note, "Nearly 35% of the assessors were female and 5% were black." They do not say what the race and gender of the remaining assessors were. Perhaps it is reasonable to conclude that they were white men, but the facts are not clear from the article. Huck and Bray (1976) found that black women were rated significantly lower than white women on administrative skills, sensitivity to the social environment, and effective intelligence. There was no difference between the two groups on interpersonal effectiveness. For the white women, the correlation between overall assessment and job performance was .41 ($p < .01$), and for black women it was .35 ($p < .05$). For white women, the correlation between overall assessment and potential for advancement was .59 ($p < .01$), and for black women it was .54 ($p < .01$). After checking, the authors report no differences in the regression lines predicting performance or advancement potential between the two race-gender groups. They conclude by saying that, "The assessment center method appears to be highly useful in providing opportunity to the most capable in an unbiased manner." In a fashion similar to their not explicitly reporting the proportion of white male assessment center raters, the writers also do not comment on the proportion of white men in the organization who make the job performance and promotion decisions. If they had, the words might be of the sort, "These

results may depend on the correlation between the predominance of white men as assessment center raters and white men as bosses who rate job performance and advancement potential."

Schmidt and Hill (1977) examined the correlations between race-gender assessment center group composition and ratings on a variety of management potential dimensions. These authors provide no information about the race-gender composition of raters, but they give a detailed picture of the race-gender composition of the ratee groups. Their findings indicate that black women are more likely to be evaluated negatively on forcefulness and to receive lower ratings by peers and assessors on the group exercise, if there are more white males in their assessee group. Black women also received higher ratings in forcefulness and lower ratings on written communications, the more white women were in their assessee groups. White men, on the other hand, received lower ratings on oral communications and gave themselves lower ratings on the group exercise, the more black women were in their assessee groups. White men also received higher ratings on oral and written communications and gave themselves higher ratings on the group exercise, the more white men were in their assessee groups. The writers conclude that their results "were of marginal statistical and practical significance" (Schmidt and Hill, 1977, p. 263). In the text of the article, they note that the larger zero-order correlations are consistent with cultural stereotypes.

Hakel, Appelbaum, Lyness, and Moses (1982) reported a study in which they varied the race and gender of both ratees and raters. Candidates were assessed on the eight dimensions of the ATT Management Potential Appraisal plan. The study included both experimental and field methods. The authors conclude, "The results show unequivocally that trained raters

can make ratings of the eight MPAP dimensions and overall potential both reliably and impartially... no evidence of race or sex bias [was] found (Hakel et al 1982, p. 1). The power of their statistical procedures permitted a 90% probability of detecting race or sex bias of 0.2 standard deviation. Although the authors recognize that accepting the null hypothesis violates the logic of classical statistical inference, they nevertheless write, "Given the range of variation for each of the independent variables... and the power of the design, the failure to reject null hypotheses concerning race and sex biases has great practical importance (Hakel et al, 1982, p. 43)." They add, "Do prejudice and malicious intentions exist? Most surely they do, and they are individual phenomena... Researchers have, however, extrapolated too readily in expecting these individual phenomena to be exhibited as significant systematic sources of variance in aggregated data (Hakel et al, 1982, p. 43). The writers are ready to accept the notion of individual but not collective bias in their data. If one observes only their statistical results, this conclusion is understandable. But there are other indications that group level effects may have been operating.

In describing the MPAP system, Hakel et al (1982, p. 6) state, "A fundamental premise of the plan is that the supervisor is in the best position to observe the current job performance of the subordinate and to use those observations to judge potential for working effectively at the next higher level of management." To establish their experimental conditions, Hakel et al 1982) made video tapes of a first level manager varying the race and gender of the role player. They describe the process of developing the tapes as follows: "Each [of the role players] had previously worked in this position in his or her own company and had been promoted to higher positions. The white male actor was taped first, and the unedited versions of his tapes

were shown to each of the other actors on subsequent days of taping. Each of the other actors was instructed to use the taped scenes as models, and to try to use the same approach to the situations, coming so close to being identical as possible..." (Hakel et al, 1982, p. 14). The writers give no explanation as to why the white male was used as a model for the other three role players. Since all four role players had been promoted to higher positions, the reason for selecting the white male as a model was not obvious based on job and organization experience. Finally, there is the question of the authors' affiliations. At the time of the writing, three of them (Appelbaum, Lyness, and Moses) were members of the ATT organization, while Hakel was affiliated with Ohio State University and Organization Research and Development, Inc. It is possible that all four researchers are white; we know from personal experience that three are. The writers do not report their race and gender, and they do not reflect upon the possible impact of these group memberships or their organizational affiliations on the design or interpretation of the research.¹ Had the researchers been using intergroup theory in their investigation, they might have raised a variety of questions about their own work that they did not. They would have asked why only the supervisor's view was important to determine mobility potential. They would have asked why the white male supervisor was selected as a model for the three other race-gender role players. And they would have asked what potential impact their own identity and organization groups

¹We also note that the first author of this paper received no response from Hakel to a letter that asked a series of questions about whether Hakel and his co-authors had thought about these sorts of questions.

might have on the design and interpretation of their study. If they had asked these questions, they might have made different decisions about how to carry out their research and about what conclusions could be drawn from the results.

Conclusion. In bringing intergroup theory to the problems of measuring managerial potential and intervening to improve the racial equity of promotion decisions, we confront a number of facts:

(1) A number of literature reviews, meta-analyses and individual studies report empirical results that are consistent with key propositions from intergroup theory. These include findings of how individual members of groups make ratings about their own and other group members and how group forces affect decisions about whether members of one group decide to support the promotion of members of other groups. Intergroup theory responds to some clearly stated needs in the empirical literature on managerial performance measurements.

(2) But not all results fit a pattern directly interpretable by intergroup theory. In some instances, authors said their findings were not powerful statistically or practically. In other cases, writers argued strenuously that they had reliable and impartial ratings or sound decision processes. Applying intergroup analysis to the reasoning of these writers, however, we found evidence that they overlooked or minimized the effects of their own senior white male perspectives on their analyses.

Although intergroup theory applies to researchers as well as to respondents (Alderfer, 1983, 1985; Tucker, 1984), the current norms of social science generally do not call upon investigators to discuss their identity and organization group memberships or to examine how group level forces on

investigators may shape their behavior and cognitions. We are caught between conflicting philosophical principles. The first--and currently more dominant--states that bias is a factor to be eliminated through various means of individual training, experimental design, and statistical control. The second assumes that no one--including social scientists--can escape from the effects of group forces. From this perspective, "bias" is a natural human condition. It is managed most effectively first by being open to covert processes and second by coping with them directly. Implicitly, the first view prefers not to see the effects of group forces and runs the risk of denial and suppression, often unconsciously. On the other hand, the second view risks exaggeration or even paranoia. The second view does not oppose individual training or experimental and statistical control. But it recognizes that group forces shape these processes, too, and builds procedures that balance group level perspectives into the conduct accepted research procedures.

Intervention to Improve the Racial Equity of Upward Mobility Decisions

Having shown that intergroup concepts can be employed to explain results from largely atheoretical studies of assessment and promotion, we turn now to using the theory to design better measurement methods and to improve promotion decision processes. Adjusted measurement methods build in rather than keep out organization and racial group consciousness. Altered promotion decision processes create new structural arrangements to change the group composition and intergroup negotiations involved in mobility decisions. The processes of structured change follow directly from the changing states portion of intergroup theory.

The practical problem was how to improve the racial equity of promotion decisions in a predominantly white corporation that had approximately 13,000

employees, 3,000 white managers, and 180 black managers. The corporation had a long history of taking progressive actions on matters of race-relations. Attention to the question of promotion decisions arose through a systematic diagnosis of race relations in management (Alderfer, Alderfer, Tucker, and Tucker, 1980). Concern with promotions was highly important to black and white groups, each thought the other had a decided advantage. Blacks thought whites had the more advantageous position because there were very few blacks at or above middle management and none at the very top of the corporation. Whites thought blacks had the advantage because of the corporation's attention to racial issues in the workplace and apparent commitment to affirmative action. Both groups recognized that the subject of promotions was highly sensitive for virtually all managers.

The corporation made promotion decisions through an elaborate system of personnel committees, structured by job level and by department. Oversight authority for the system as a whole was carried by the corporate personnel department. Authority for decisions about particular individuals rested with department-level committees. The race relations diagnosis showed that members of these committees had an especially conflicted view of the relationship between race and promotions (Alderfer et al, 1980, p. 158). Members of personnel committees compared to non-members of personnel committees, more tended to: (a) see racism in the corporation, (b) think the corporation had done enough on race, (c) see blacks and whites as socializing separately, (d) report regular interaction with blacks, (e) believe evaluations were biased against blacks, (f) believe a person's promotion did not depend on race, (g) believe whites did not have an advantage in training or evaluation, (h) believe blacks did have an advantage in promotions; and (i) believe whites did not have an advantage in promotions. When the diagnosis was carried out, two percent of personnel committee members were black.

Committee members, though predominantly white, nevertheless showed some more empathy for black perspectives than whites in general. They saw more evidence of racism in the corporation as a whole and more indications of evaluations being biased against blacks. But on matters of promotions, committee members emphasized the white perspective that whites did not have a promotion advantage and that blacks did. These results suggested that committee members would be open to improved methods of assessing the managerial potential of upward mobility candidates, but they would not be inclined to change their own structures and processes to improve the racial equity of their decisions.

The intervention program addressed both the assessment of managerial potential and the structure of the personnel committee system. Changes were made in accord with principles derived from intergroup theory, taking account of both organization and identity groups. The aims of the intervention were (1) to improve the information available about candidates for promotion and (2) to increase the equity of the decision-making processes that eventually determined who was promoted.

Next, we present the theoretical concepts for predicting and explaining the change processes. These ideas consist of those parts of intergroup theory that pertain to changing race relations in organizations (Alderfer, 1985). Then, we describe the major program elements and relate them to the theory. In this program, concrete actions followed directly from the theory.

Changing State Concepts from Intergroup Theory. The program was directed toward eliminating racism in the organization. Chief among several targets for change were the structures that influenced mobility. Attention to the awareness of specific individuals was part of the overall plan, but the emphasis was on group rather than individual variables. As part of the training for individual managers, we developed a workshop on race relations competence. All people directly involved in this intervention attended the workshop, and in the long-run

all members of personnel committees were expected to attend. But we developed the workshop less to alter the racial prejudices of individuals and more to help individuals better to understand the group level dynamics of racism. Mobility processes reflect more covert than overt racial dynamics, in part because promotion decisions in most organizations are secret and highly guarded processes. Change in this arena meant addressing unconscious group and inter-group processes. Intervention into these processes was directed toward long term change in the power of blacks in relation to whites in the organization.

Because promotion processes are highly guarded and very important to most people, we expected to face major resistance and denial. The program was designed to work with the resistance, not to overcome it by authoritarian decree. We expected denial to be present at each stage in the process. The stance was to accept the right of people to deny the existence of difficulties but not to allow the denial to overwhelm data that identified problems with the existing system.

The chief method for working with resistance and for preventing denial from becoming excessive was dialectical conflict. The essential process encourages different perspectives to be expressed and insists that the differences be respected. The most desirable solutions meet the concerns of both parties. When such "win-win" solutions are not possible, then the outcomes should reflect compromises that do not severely violate the concerns of either party.

In this situation, there were needs for dialectical conflict between organization groups and between racial groups. Structural interventions, therefore, were designed to balance the concerns of people who were members of newly created intervention groups with those of existing personnel systems and to balance the perspectives of black and white managers. The double form of dialectic provided bases for self-reflection on the change process itself as well as on the racial dimensions of the intervention.

We expected parallel processes from the change program to the organization and from the organization to the change program to influence the dialectical conflict. To the degree that the change program had established processes that reduced racism, we expected those affective, cognitive, and behavioral patterns to be injected into the organization. To the degree that the intervention program evoked resistance from the organization, we expected those affective, cognitive, and behavioral patterns to affect the change program.

A key element of the intervention strategy was a temporary eight person ad hoc task force balanced by race and gender that performed evaluations of upward mobility candidates separately from the existing personnel committees. This microcosm group included members from the race relations advisory group who were members of the personnel committee system and some members of the personnel committee system who were not members of the advisory group. Thus, the ad hoc group was an arena for dialectical conflict between both racial groups and organization groups.

Program Elements. Concretely the intervention aimed to improve the quality of evaluative information about candidates and to enrich the dialogue among evaluators. The expected results were better decisions about all people who were promoted and a more equitable distribution of promotions among black men, black women, white men, white women, Hispanics, and other minority group members. As it turned out, the intervention program was designed at the same time as the total organization was undergoing a change in mission. The goal of improving the entire corps of managers was widely shared and added an impetus to the upward mobility intervention. Pressures affecting the whole corporation from the change in mission, however, also had an impeding effect. Faced with the tasks of changing major ways in which the corporation did its business, the management also experienced the special efforts required by the intervention as yet another drain of time and resources.

In this article we call the intervention program, "The Upward Mobility Program." This is a disguised name to protect the anonymity of the corporation. During the life of the intervention, the actual program had three different names. Changes in the official designation reflect the controversy associated with the undertaking. Each name change represented an attempt to find a designation that was less objectionable to the larger organization. Names changed at critical transitions in the history of the project. The first name change occurred when the idea of the program moved from concept to implementation. Those opposed to the program were unable to prevent actions that set into motion new selection mechanisms. The second name change occurred just before the program completed selection of the major cohort of members. A new name at this point was designed to reduce the discouragement of those who were not selected and their sponsors.

The framework of the program was to identify the most promising lower level managers and to provide them with special education in order to prepare them for higher management positions. Approximately twice the number of people were selected as the predicted number of management openings. Being selected for the program, therefore, did not guarantee promotion. Moreover, not being selected did not prohibit promotion. People chosen for the program received added visibility and increased preparation. The aim of the program was to accelerate the process of preparing members for promotion. Once underway, the program had four major phases.

In phase 1, the departmental committees did an initial screening of candidates. Corporate personnel files and other knowledge informally available to committee members provided the information for these decisions. Candidates selected in this phase became eligible for more detailed consideration by the innovative procedures established by the program.

Phase 2 was a program of interviews designed to generate new information about each candidate. For each person who had been selected by the end of phase 1, four interviews were conducted by a person from outside the organization. Whenever possible, the outside interviewer was of the same race and gender as the candidate. This pattern was followed exactly for all black men and women and for all white men and women. Because the number of Hispanic candidates was small compared to black and white groups, only one Hispanic interviewer, a female, was employed. Since their numbers were too small to justify the expense, members of other minority groups (e.g., Asian Americans, Native Americans) did not have race-gender matched interviewers.

The design of the interview process reflected concern for both organization groups and identity groups within the corporation. Two interviewees--the boss and a person referred by the boss--reflected the traditional hierarchical perspectives on a candidate's managerial potential. Two other interviewees--the candidate and a person referred by the candidate--represented the candidate's perspective on her or his managerial potential. Matching race and gender of the interviewer with the candidate whenever possible reflected identity group considerations.

Table 1 shows the distribution of program candidates by race and gender. The table also shows the race and gender of bosses, candidate referral people and boss referral people. White men are the most common race-gender group in all of the interviewee roles. Next in order of frequency are white women, black women, and black men. Candidates showed some tendency to match their own race and gender in selecting referral people. The order of frequency in matching race and gender of candidate referral people was white men, white women, black women, and black men. Throughout the process Hispanic people had no one of their own race and gender as interviewees. The preponderance of white men in boss and boss referral roles suggests that to the extent that

TABLE 1.

Race and Gender of Candidates and Referral People

	<u>Black Men</u>	<u>Black Women</u>	<u>White Men</u>	<u>White Women</u>	<u>Hispanics</u>
CANDIDATES n	27	33	56	63	30
CANDIDATE REFERRAL n(%)	3(11)	5(15)	38(68)	22(35)	0(0)
BOSS n(%)	1(4)	1(3)	51(91)	10(16)	0(0)
BOSS REFERRAL n(%)	2(7)	3(9)	46(84)	8(13)	0(0)
CANDIDATE REFERRAL % WHITE MALE	52	48	68	57	57
% OWN RACE-GENDER	11	15	68	35	0
BOSS % WHITE MALE	78	58	91	81	70
% OWN RACE-GENDER	4	3	91	16	0
BOSS REFERRAL % WHITE MALE	82	54	84	84	63
% OWN RACE-GENDER	7	9	84	13	0

alternative perspectives on the assessment of managerial potential arise as a function of race and gender, they will appear through the reports of candidates and candidate referral people.

In phase 3, data from the interviews were analyzed and presented to the special ad hoc task force. The task force consisted of eight individuals at the third level of management, the target position toward which the upward mobility program was directed. Four members of this group--two black men, one white man, and one black woman--were also members of the race relations advisory group. Four other members--two white women, one white men, and one black woman were not members of the advisory group. All members of the special ad hoc task force were also regular members of the personnel committee system, and all had attended the race relations competence workshop. The eight people also represented different corporate departments. Based on its composition, the group absorbed parallel processes from race and gender identity groups in the organization. Departmental differences, while present, were less prominent because each person came from a unique functional location, and the group's composition gave more weight to race and gender than to departmental identities. Using information from the interviews and the personnel files, the group was charged with dividing candidates into one of three categories: IN, ALMOST IN, and OUT in relation to the upward mobility program. Their results projected back into the organization a tentative evaluation of candidates based on processes designed to compensate for the white male dominance of the normal personnel committee system.

Task force members received detailed data about each candidate from analyses of the interview results. They received information on each individual candidate's scores from both interview questions and rating scales on each

dimension of managerial potential and on overall program fitness. These data were expressed as standardized scores for reasons to be described below, and they were expressed in quantiles. Candidates were also placed in quartile groups three ways: by the entire program, by race-gender group, and by department. The three rank orders reflect the different frames of reference that were relevant to determining whether a candidate should be selected for the program.

Phase 4 of the program consisted of selection of candidates into the program by the normal personnel committee system. This step placed the final decision for who was in the program with corporate divisions and departments. At the final stage, departmental committees reviewed personnel records, special interview data, and the recommendations of the ad hoc task force. They also added their own assessment of the candidate's "promotability" within the unit where the person was currently working.

In total, the selection process took approximately two years, lasting from 1982 to 1984. An initial cohort, selected only by the special task force, was identified in 1982, consisted of 32 members. The second cohort, ultimately consisting of 71 people, was subject to the full four phases, which took approximately two years to complete. Chief among the forces that impeded the selection process was the sense that a person's career was being overdetermined by whether he or she was selected for the program, a belief that especially was held by white members of management. As a result, ground rules for the program were reviewed periodically and changed several times. The final form indicated that the upward mobility program would remain open on an annual basis and that some aspects of the training made available to members selected for the program would also be offered to other members of lower management in the corporation.

Empirical Analysis of the Selection Process

This section provides a statistical analysis of the selection process from phases 2 through 4. These results show which of the variables predicted program fitness from the interviews, the special task force, and the departmental personnel committees. Analyses were designed to identify the effects of race, gender, hierarchy, and the differential functioning of the two selection committees. The aims of the analyses are to determine the effects of the combination of organization and identity group intervention.

At some places, the purpose of the analyses was to determine whether intergroup forces were shaping selection results. In other instances, the aim was to determine whether intergroup intervention had the intended effects. The overall pattern shows the combined effects of evolutionary and planned change in determining who was selected for the upward mobility program.

Potential Assessment Results. The purpose of the four interviews was to improve the measurement of each candidate's managerial potential. Each of the interviews was conducted in accord with the same set of interview questions, including a rating form designed to assess ten dimensions of managerial potential. At the very end of the interview, the interviewee was also asked to make an assessment of the candidate's overall fitness for the program. Figure 1 contains the interview questions. Figure 2 contains the ten dimensions with definitions, and Figure 3 consists of overall program fitness rating form.

The first four interview questions provide the interviewee with an opportunity to think aloud about the candidate without reference to the dimensions of managerial potential. The fifth question asks for explicit ratings on the ten dimensions. The sixth question again invites comments

Figure 1. Upward Mobility Selection Interview Questions

1. Could you describe a recent event that shows examples of the candidate's (your) general characteristics as a management person.
2. What are the most effective things the candidate has done that you know about? (one follow up question)
3. what are the least effective things the candidate has done that you know about? (one follow up question)
4. Can you think of a particularly difficult situation the candidate has had to handle? What was the situation? What did he or she do about it?
5. As we mentioned at the outset, we ask each person who is interviewed to rate the candidate on 10 dimensions of managerial potential. Would you please use this form? (Give the form to the interviewee)
6. (After form is completed) Are there one or two dimensions that you want to discuss as being particularly significant? Please give an example.
7. As you may know, the last two dimensions of the rating form are unique, while the other eight are used by other companies. We, therefore, want to ask you to address more dimensions specifically.
 - a) "Competence in managing differences" is defined as:

Extent to which a person is able to understand, empathize, and work effectively with persons of a different race, gender, or age; is able to recognize and confront discrimination; and behave as a positive force for the proper utilization of all persons in the workplace.

Can you give any examples where the candidate (you) has done managerial work that relates to this dimension?
 - b) "Social assertiveness" is defined as:

Extent to which an individual reflect a willingness to stand up for his/her rights; is not fearful of standing out in a crowd, will take action in a troublesome situation, will confront disagreement, and will take appropriately novel and independent action to solve business problems.

Can you give any examples where the candidate (you) has done managerial work that relates to this dimension?

Figure 1 (page 2)

8. What other qualities bearing on the candidate's fitness for higher level management should we discuss in order to have a full picture of the person? Please give an example of each quality.
9. Now we are coming to the end of the interview and I would like to ask for your summary assessment of the candidate.
 - a) What are the person's most significant strengths?
 - b) What are the person's most significant weaknesses?
10. Finally would you please give me your judgment about whether the person should be in the program by circling the number that most states your judgment. (Hand person the one page.) Is there anything else you wish to add?

We have a final request for all who participate in these interviews. Can we ask that you tell no one what questions we asked or what your answers were? To the extent that people are able to abide by this request we get more independent information for each candidate. Thank you very much.

ADDITIONAL QUESTIONS for candidate and boss

Candidate: Would you give me the names of two other people we could interview about you. We'll only interview one. If there is a choice, who would you prefer we talk to?

Boss: Would you give the names of two other people we could interview about We'll interview only one. If there is a choice, who would you prefer to talk to?

Figure 2. Dimensions of Managerial Potential for Coding Interviews and Rating Candidates

Please rate the candidate for the Hi Po program in terms of your standards for an appropriate Hi Po candidate. Use the scale definitions provided. Place a check mark (✓) in the box that gives your judgment on each scale.

	<u>Far below</u>	<u>Somewhat below</u>	<u>Meets my standards for appropriate Candidate</u>	<u>Somewhat above</u>	<u>Far above</u>
1. <u>Oral communication.</u> Ability to present ideas and information concisely and effectively in an oral presentation to a group; organizes logically; uses appropriate terms; speaks clearly and concisely; acts confident; obtains audience attention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <u>Written communication.</u> Ability to express ideas and information concisely and effectively in writing; organizes logically; uses appropriate terms; writes clearly and concisely; uses appropriate grammar and style.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <u>Flexibility.</u> Ability to change or vary one's approach or strategy for the purpose of accomplishing a task; suits style to setting; suits approach to situation needs; tries alternatives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <u>Performance stability.</u> Ability to maintain a consistent level of performance under conditions of stress, uncertainty or lack of structure; maintains performance under increased pressure and uncertainty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Decision making. Ability to make timely and effective decisions on the basis of available information; uses available information; anticipates future; recognizes interactions; considers situations and alternatives

6. Leadership. Ability to influence others to perform a task effectively; shows active involvement; obtains positive response; moves toward goal.

7. Organizing and planning. Ability to schedule resources and personnel and to develop systematic and effective means for accomplishing a task; sets priorities; anticipates needs and avoids schedule conflicts; delegates appropriately; follows up and gets work done.

8. Inner work standards. Extent to which an individual demonstrates a desire to perform at or near the limits of capability most of the time, even when a lesser effort would be acceptable; does best personal job; satisfies own criteria.

Meets my standards for appropriate candidate

Somewhat below

Somewhat above

Far below

Far above

9. Competence in managing differences. Extent to which a person is able to understand, empathize, and work effectively with persons of a different race, gender, or age; is able to recognize and confront discrimination; and behave as a positive force for the proper utilization of all persons in the workplace.

☐ Far above

☐ Somewhat above

☐ Meets my standards for appropriate candidate

☐ Somewhat below

☐ Far below

10. Social Assertiveness. Extent to which an individual reflects a willingness to stand up for his/her rights; is not fearful of standing out in a crowd, will take action in a troublesome situation, will confront disagreement, and will take appropriately novel and independent action to solve business problems.

☐

☐

☐

☐

☐

Figure 3. Program Fitness Rating Form

RATING FORM

My overall judgment about the fitness of the person we have been discussing for the program is:

(PLACE CHECK (✓) IN BOX THAT BEST EXPRESSES YOUR JUDGMENT)

- ☐ Far below my standards for an appropriate candidate.
- ☐ Somewhat below my standards for an appropriate candidate.
- ☐ Meets my standards for an appropriate candidate.
- ☐ Somewhat above my standards for an appropriate candidate.
- ☐ Far above my standards for an appropriate candidate.

on concrete examples that the rating process might have evoked for the interviewee. Question seven pays particular attention to the dimensions of managing differences and social assertiveness. These two criteria were added to the MPAP variables as used by Hakel et al because of the special objectives of the upward mobility program. Managing differences bears directly on race relations competence and to the aim of improving race relations in the organization. Social assertiveness follows the corporate need for managers who can operate in the new markets the corporation was planning to enter. The eighth question invites incorporation of additional dimensions outside the prepared list, and the ninth asks for a summary review of the entire interview. The final question calls for an overall judgement of program fitness after the interviewer has taken the interviewee through a comprehensive and concrete review of the candidate's managerial attributes.

All of the interview questions are open-ended. Except for social assertiveness and managing differences, they neither supply dimensions, nor examples of effective and ineffective behavior. The interviewer's tasks were to elicit descriptions of behavior from the interviewees and to record those accounts. Hand written notes from the interviewers were then transcribed. Interview transcripts were randomly assigned to coders, whose tasks were to tabulate the number of favorable and unfavorable instances of managerial behavior according to rules given below. Interviewers also prepared one page qualitative summaries of each interview according to a set of specific guidelines.

The ad hoc task force, therefore, received both quantitative and qualitative information from the interviews. Quantitative information consisted of content coding of the open-ended questions, the results of the

managerial potential dimension ratings, and the program fitness rating. Qualitative information consisted of the written summaries prepared by interviewers after all the interviews about a particular candidate had been completed. The philosophies and methods for preparing these two sources of information were different. For the quantitative data, the emphasis was on multiple and independent observers, including both interviewees and coders. Statistical procedures to be described below were further employed to improve the quality of the data. In terms of the quantitative data, the interviewers' job was to be as objective as humanly possible. They were to record what interviewees said without editing or interpreting. For the qualitative data, the emphasis was on developing a holistic portrait of the candidate. Here the interviewer was asked to review all of the information about the candidate, prepare a summary of strengths and weaknesses as revealed by comparisons across interviewees, comment on any divergence among interviewees in their assessments, and assess on the overall quality of data about the candidate.

All of the interviewers were advanced graduate students in organizational behavior or practicing consultants, and all had participated in the race relations competence workshop prior to conducting the interviews. Interviewers also received intensive training and practice before conducting the interviews. The qualitative summary called upon the full range of competence of the interviewers. It was tool to formulate a sense of the candidate as a whole person by an interviewer of her or his own race and gender. It was also a report evidence about race or gender bias in the information about the person.

Developing the quantitative reports on the candidates was a detailed and rigorous process. The coding process defined each interview question, except the last one, as a potential unit. Interviewer instructions were to ask for concrete examples whenever a respondent made broadly abstract or simply evaluative statements. The coding system counted concrete examples that met the criteria for one or more categories of managerial potential.

The data obtained from the interviews lends itself to presentation by the multitrait-multi method matrix (Campbell and Fiske, 1959). For purposes of the initial analysis, we considered open-ended interview questions and questionnaire rating scales as methods. At the outset, we took score values by candidate, candidate referral person, boss, and boss referral person as traits.

For a variety of reasons we did not assume that positive and negative examples of managerial behavior were necessarily inversely correlated and, therefore, analyzed these scales as separate methods. If one assumed the operation of a simplifying set about each person, then one would expect a set of inverse correlations. But our interview methods were designed to break such a set by carefully balancing questions that asked for favorable and unfavorable examples. Moreover, managerial leadership involves taking action, which may not always produce the intended effects. Thus, there might be some tendency for positive and negative scores to be positively correlated.

We selected interviewee roles as traits initially rather than ten dimensions of managerial potential because cumulating examples across the entire interview gave more trait variance than cumulating within a category

across each interview. Moreover, intergroup theory provides a basis for predicting patterns of relationships among the four perspectives, while there was no theoretical basis for predicting patterns of relationships among the ten dimensions of managerial potential.

Predictions from intergroup theory derive from the notion that candidate and candidate referral people belong to the same organization group and therefore share similar cognitive formations, as do boss and boss referral person. The theory, therefore, predicts that correlations between these pairs of traits would be higher than other pairs in the heterotrait triangles. These predictions pertain to Campbell and Fiske's (1959, p. 83) third criterion for discriminant validity, which they state as, "the same pattern of trait interrelationship be shown in all of the heterotrait triangles of both monomethod and heteromethod blocks."

Table 2 presents the multitrait-multimethod matrix of correlations among raw scores. In this study there are several reasons to be concerned about common method variance, especially between the two kinds of interview methods. Interviewers might vary in how much they "draw out" interviewees and in the extensiveness of their notes--despite substantial training. These effects would result in increases or decreases in the amount of content as a function of interviewer, rather than interviewee. Coders might have similar tendencies to mark a greater or lesser number of instances of behavior for the examples provided in the interviews. In addition, the presence of a common interviewer for all the people relevant to a particular candidate might also affect the questionnaire responses as a consequence of variations

TABLE 2.

Raw Score Multitrait-Multimethod Matrix for Measures of Managerial Potential
 (total sample) ^(*)
 n = 223

	<u>Positive Interview Scores</u>				<u>Negative Interview Scores</u>				<u>Questionnaire Ratings</u>			
	C.	C.R.	B.	B.R.	C.	C.R.	B.	B.R.	C.	C.R.	B.	B.R.
<u>Positive Interview Scores</u>												
CANDIDATE												
CAND. REFER.	(.90)(**)											
BOSS	.70	(.90)										
BOSS REFER.	.68	.70	(.90)									
	.46	.64	.48	(.90)								
<u>Negative Interview Scores</u>												
CANDIDATE												
CAND. REFER.	[.17]	.16	.17	.24	(.70)(**)							
BOSS	.45	[.49]	.56	.34	.24	(.70)						
BOSS REFER.	.38	.58	[.50]	.52	.47	.61	(.70)					
	.41	.53	.42	[.37]	.30	.52	.72	(.70)				
<u>Questionnaire Ratings</u>												
CANDIDATE												
CAND. REFER.	[.01]	.08	-.03	.00	[-.06]	-.21	-.15	.00	(.70)			
BOSS	.09	[.20]	.00	.16	.00	[-.22]	-.06	-.10	.29	(.77)		
BOSS REFER.	.04	.07	[.22]	.09	-.01	-.20	[-.21]	-.22	.19	.29	(.83)	
	-.01	.04	.00	[.24]	-.06	.26	-.15	[-.29]	.13	.27	.41	(.81)

^(*) For n = 200 : r = .14, p < .05; r = .18, p < .01

^(**) Reliability estimates were not computed separately for each trait in the interview data. Thus all reliability estimates are identical for the interview portion of the matrix.

in interviewer style. Interviewers who showed a warmer, more engaging style, for example, might inadvertently cause respondents to give higher questionnaire ratings, while those who acted in a cooler more distant manner might evoke lower questionnaire ratings. Campbell and Fiske (1959, p. 85) indicate, "the presence of method variance is indicated by the difference in correlation between parallel values of the monomethod block and the heteromethod blocks, assuming comparable reliabilities.

The coding reliability estimates shown in Table 2 were based on two coders working independently on a sample of 100 sets of interview notes drawn as a stratified random sample across all interviewers. The sample did not distinguish among type of interviewee; thus the entries are identical for each type of respondent within the two interview methods. Questionnaire reliability estimates were based on a split-half Spearman-Brown coefficients. A notable difference (.90 vs. .70) between positive and negative interview scores was present -- probably due to a restricted range among negative interview scores. Respondents did not provide as many examples of unfavorable behavior as of favorable behavior. Concerns about differential reliability apply to comparisons involving positive interview scores ($r_{SB} = .90$) with negative interview scores ($r_{SB} = .70$) but probably to neither questionnaire ratings (median $r_{SB} = .79$) with negative interview scores nor positive interview scores with questionnaire ratings.

In the positive interview to questionnaire rating comparison, all of the monomethod values exceed the heteromethod values. This statement holds regardless of whether the comparison proceeds from the positive interview block to the heteromethod blocks or from the questionnaire ratings to the heteromethod blocks. A similar pattern holds for negative interview-

questionnaire comparison. Both monomethod sets of parallel correlations exceed all the comparable values in the heteromethod blocks. There seems to be little doubt that substantial method variance is present in the raw score data.

To test for the hypothesized sources of method variance, we computed F tests across interviewers' and coders' raw scores. Table 3 shows the results of these analyses for interviewers. Significant interviewer effects are observed on positive interview scores and on questionnaire ratings for all four types of interviewees. In addition, a significant interviewer effect was observed on candidate negative interview scores but not for the other three types of respondents. We conclude that there was an interviewer component to the common method variance.

Table 4 shows the results of testing for coder effects. Significant differences among coders are observed for candidate positive, candidate negative, boss positive, boss referral positive, and boss referral negative interview scores. There were no significant differences among coders on the candidate referral positive or negative interview scores. These findings support operation of coder effects on the interview scores. However, none of the tests showed significant coder effects on the questionnaire ratings. Interview transcripts were assigned to coders on a strictly random basis. Therefore we had no reason to expect coder differences on the questionnaire ratings, because coders did not see and did not know the questionnaire ratings made by the interviewees whose interview questions they scored.²

²Six of the eight coders were also interviewers. Two coders did no interviewing, and two interviewers did no coding. No interviewer received her or his own interview notes to code. Thus coding was completely independent of interviewing. Coders received race relations competence training as well as technical preparation for their work.

TABLE 3.

Mean Values of Raw Positive and Negative Interview Scores and
Questionnaire Ratings for Interviewers

	<u>Interviewers</u>								$F_{7,215}$	P
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>		
CANDIDATE POSITIVE	8.84	9.12	11.63	8.15	10.94	4.07	8.78	10.03	6.01	.0001
CANDIDATE NEGATIVE	1.48	1.82	1.33	2.30	2.31	1.60	1.52	2.48	3.34	.002
CANDIDATE QUESTION.	43.84	45.08	40.73	43.59	43.85	42.93	41.56	42.97	6.88	.0001
CAND. REF. POSITIVE	7.20	8.68	9.43	8.26	10.62	4.73	7.23	9.79	3.23	.003
CAND. REF. NEGATIVE	2.07	1.63	2.22	1.68	1.60	1.40	1.68	2.32	0.98	n.s.
CANDIDATE QUESTION.	44.64	43.08	38.97	40.97	41.94	42.87	38.56	39.97	2.62	.02
BOSS POSITIVE	9.08	9.68	8.20	9.65	9.68	5.36	7.41	9.94	1.98	.06
BOSS NEGATIVE	1.68	1.95	2.52	1.83	1.77	1.78	1.96	4.52	1.62	n.s.
BOSS QUESTION.	43.32	45.28	35.83	43.56	43.53	43.27	39.41	38.18	5.97	.0001
BOSS REF. POSITIVE	7.20	8.44	9.00	8.47	9.32	5.13	7.04	7.85	2.75	.01
BOSS REF. NEGATIVE	2.00	2.00	2.83	1.93	1.86	1.29	1.67	2.63	1.07	n.s.
BOSS REF. QUESTION.	40.48	40.20	36.73	41.21	43.82	42.87	37.96	38.64	2.96	.006

TABLE 4.

Mean Values for Raw Positive and Negative Interview Scores and
Questionnaire Ratings for Coders

	<u>Coders</u>								$F_{7, 215}$	p
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>		
CANDIDATE POSITIVE	9.25	8.26	12.06	11.96	9.42	7.35	8.95	10.44	4.40	.0001
CANDIDATE NEGATIVE	1.64	2.20	1.38	2.67	1.55	1.58	2.22	1.17	4.14	.0001
CANDIDATE QUESTION.	43.13	42.57	42.81	43.46	44.43	44.33	42.65	41.81	0.81	n.s.
CAND. REF. POSITIVE	10.81	8.46	7.75	8.84	7.93	7.44	9.50	9.23	1.35	n.s.
CAND. REF. NEGATIVE	2.67	1.81	1.44	2.21	1.67	1.60	1.55	1.56	1.50	n.s.
CANDIDATE QUESTION.	37.77	42.63	40.20	40.47	43.93	41.06	41.67	40.15	1.83	n.s.
BOSS POSITIVE	8.29	7.97	10.58	12.74	7.21	7.44	10.00	10.00	3.63	.001
BOSS NEGATIVE	1.47	2.23	4.32	2.61	2.13	1.77	1.50	2.17	1.08	n.s.
BOSS QUESTION.	40.71	41.33	44.88	39.74	40.95	42.72	38.73	39.67	2.44	n.s.
BOSS REF. POSITIVE	8.31	7.66	11.00	9.44	6.91	5.97	8.86	8.26	3.83	.001
BOSS REF. NEGATIVE	1.54	2.30	4.86	2.40	1.30	1.77	1.35	2.55	3.26	.003
BOSS REF. QUESTION.	38.19	40.51	38.50	42.16	37.73	39.82	41.07	39.47	0.74	n.s.

To correct for the method variance associated with interviewers and coders, the raw data were transformed to standard scores. Positive and negative interview scores were standardized twice, once by interviewer and once by coder. Questionnaire ratings were standardized only by interviewer. From this point forward, all reported empirical results are based on standard scores.

Table 5 presents the multitrait-multimethod matrix for the standardized scores, which we now examine according to the criteria for convergent and discriminant validity proposed by Campbell and Fiske (1959, pp. 82-83). Of the three validity interview-questionnaire and the negative interview-questionnaire entries, for the most part, are significantly different from zero and sufficiently large to be interesting. The positive interview-negative interview diagonal, however, has consistently low entries, and only one is significantly different from zero. We conclude that the criterion of convergent validity is satisfied for the positive interview-questionnaire diagonal and for the negative interview-questionnaire diagonal but not for the positive interview-negative interview diagonal.

The first criterion for discriminant validity is that entries on the validity diagonal exceed values appearing in its column and row in the heterotrait-heteromethod triangles. This criterion is satisfied for candidate referral, boss, and boss referral values for the two diagonals that satisfied the first criterion of convergent validity. However, the candidate entries, while statistically significant, do not meet the second criterion of convergent validity. This finding undoubtedly, at least in part, reflects the fact that the questionnaire reliability of candidates' self ratings is lowest of the four interviewees.

The second criterion for discriminant validity is that values in the validity diagonal exceed values in the heterotrait monomethod triangles. This criterion is fully satisfied for candidate referral, boss, and boss referral measures in the positive interview-questionnaire comparison but not for the candidate measure. This criterion is also almost satisfied for the same three measures in negative interview-questionnaire comparison and again not for the candidate measure.

The third criterion for discriminant validity is that the same pattern of trait interrelationships in all of the hetero trait triangles in both heteromethod and monomethod blocks. For this criterion we predicted higher correlations within candidate and boss groups than between them. This prediction is supported in all six heteromethod triangles for the candidate-candidate referral correlations. It is also supported for the monomethod triangles of the positive or negative interview scores. The prediction for the boss-boss referral correlations is supported in questionnaire triangle, in the upper triangle of the negative interview-questionnaire submatrix, and in the upper triangle of the positive interview-negative interview submatrix. It is not supported in the monomethod triangles of positive or negative interview scores, nor in any other heterotrait triangles.

These results provide a reasonable basis for combining the three measures of each managerial potential dimension. In general, positive interview standardized scores correlate positively with standardized questionnaire ratings, and negative interview standardized scores correlate negatively with standardized questionnaire ratings. An index that added positive interview scores to questionnaire ratings and subtracted negative interview scores would be more reliable than any of the scales alone. Moreover, we can examine the convergent validity

Standardized Score Multitrait-Multimethod Matrix for Measures of Managerial Potential

 $n = 223$

① For $n = 200$: $r = .14$, $p < .05$; $r = .18$, $p < .01$

() Reliability estimates were not computed separately for each trait in the interview data. Thus all reliability estimates are identical for the interview portion of thematrix.**

TABLE 6.

Correlations Between Candidate and Boss Measures of Managerial Potential

<u>Boss</u>	<u>Candidate</u>									
	OR	WR	FL	PS	DM	LD	OP	WS	MD	AS
ORAL	.34 ^③	.15 ^①	.06	.01	.02	.17 ^②	-.06	-.03	.14 ^①	.20 ^②
WRITTEN	.21 ^②	.29 ^③	.03	.10	.01	-.03	.10	-.02	-.03	.18 ^②
FLEXIBILITY	.09	.02	.23 ^③	.17 ^①	.05	.16 ^①	-.02	.03	.06	.01
PERFORMANCE STABILITY	-.01	.03	.18 ^②	.27 ^③	.08	.07	.02	.03	.12	.06
DECISION MAKING	-.06	.11	.06	.04	.06	.03	.00	.04	-.02	.08
LEADERSHIP	.19 ²	-.03	.18 ^②	.09	.08	.31 ^③	.02	.04	.18 ^②	.16 ^①
ORGANIZING PLANNING	-.13	.05	.06	.06	.02	.04	.24 ^③	.00	-.01	-.03
WORK STANDARDS	-.04	.06	.04	.11	.02	-.03	.04	.20 ^②	-.07	.02
MANAGING DIFFERENCES	.23 ^③	.01	.23 ^③	.17	.06	.23 ^③	.03	.02	.30 ^③	.19 ^②
ASSERTIVENESS	.15 ^①	.10	.02	.09	.10	.18 ^②	.11	-.02	.01	.33 ^③

① $p < .05$ ② $p < .01$ ③ $p < .001$

TABLE 7.

Correlations Between Candidate and Boss Measures of Managerial Potential
for Race-Gender Groups

	<u>Black Men</u>	<u>Black Women</u>	<u>White Men</u>	<u>White Women</u>	<u>Hispanics</u>
ORAL	.30	.42 ^①	.22	.48 ^③	.32
WRITTEN	.20	.47 ^②	.41 ^②	.16	.22
FLEXIBILITY	-.07	.28	.17	.29 ^①	.40 ^①
PERFORMANCE STABILITY	.01	.20	.29 ^①	.42 ^③	.31
DECISION MAKING	-.32	.16	.23	.10	-.10
LEADERSHIP	.33	.29	.33 ^①	.29 ^①	.32
ORGANIZING PLANNING	.28	.16	.19	.15	.48 ^②
WORK STANDARDS	.12	.15	.34 ^①	.15	.19
MANAGING DIFFERENCES	.34	.06	.16	.35 ^②	.52 ^②
ASSERTIVENESS	.21	.21	.35 ^②	.40 ^②	.39 ^②
Average r	.14	.25	.27	.28	.32

① p < .05

② p < .01

③ p < .001

TABLE 8.

Correlations Between Candidate and Boss Measures of ProgramFitness for Race-Gender Groups

Black Men	0.43 ^①
Black Women	0.31
White Men	0.35 ^②
White Women	0.39 ^②
Hispanics	0.56 ^②
Total Sample	0.40 ^③

① $p < .05$

② $p < .01$

③ $p < .001$

over, we can examine the convergent validity and the first two dimensions of discriminate validity of these scales by correlating candidate sum scales (candidate plus candidate referral) with the boss sum scales (boss plus boss referral). Table 6 shows these results. Though none of the correlations exceeds 0.34, nine of ten coefficients on the diagonal are statistically significant. Only decision-making does not show a statistically significant correlations between the boss and candidate scales. Moreover, all entries on the diagonal, except decision-making, are larger than any value in their respective row or column. In addition, there are several off-diagonal consistent patterns of relationships among the potential dimensions. Oral and written communication; flexibility and performance stability; managing differences and assertiveness correlate with one another on a pairwise basis. Leadership tends to correlate with oral communication, flexibility, managing differences and assertiveness. Overall, the scales of managerial potential show a notable degree of convergent and discriminant validity.

In Table 7, we present the correlations between candidate and boss measures of managerial potential for the four race-gender groups and for Hispanics. This analysis tests the hypothesis that the reliability of measures for the two groups of black managers is lower than for the two groups of white managers. The basis for this prediction follows from the data in Table 1 and the concepts of intergroup theory. Black managers encountered more identity group diversity among their evaluators than white managers. Thus, we would expect lower reliability of their ratings. Correlations were converted by z transformations in order to test for average differences. The average correlation for black managers was significantly lower than for white managers ($t = 2.00, p < .03, 1\text{-tail}$). The average correlation for black men was also lower than for white men ($t = 2.08, p < .02, 1\text{-tail}$), but the average correlation for black women was not significantly lower than for white women.

Table 8 presents the correlations between candidates and boss measures of program fitness for the four race gender groups, for Hispanics, and for the total sample. Of six coefficients, only the correlation for black women is not statistically significant. Program fitness will serve as the dependent variable in the first set of analyses.

At this point, we have completed the presentation of the managerial potential measurement results. The measurement system as a whole showed reasonable convergent and discriminant validity, revealed the effects of organization and identity groups, and demonstrated clear signs that some elements were more valid than others. Clear indication of method variance was observed and corrected. Evidence in the multitrait-multimethod matrices showed effects of candidate and boss organization group dynamics. Differing degrees of convergence between candidate and boss measures as a function of race showed the effects of identity group dynamics. The least valid measures came from the negative interview scores in contrast to positive interview and questionnaire scores, from the candidate measures in comparison to the other three perspectives, and on decision-making in comparison to the other nine managerial potential dimensions.

Selection Decision Results. The selection decision results directly parallel phases 2, 3, and 4 of the intervention program. At the conclusion of phase 2, we determine which managerial potential dimensions best predict program fitness from interviewees. At the conclusion of phase 3, we determine which combination of program fitness and dimensions of managerial potential best discriminate among those candidates deemed IN, ALMOST IN, and OUT by the ad hoc task force. And, at the end of phase 4, we determine which combination of program fitness and dimensions of managerial potential best discriminate

among the candidates ultimately selected IN and OUT of the program by the departmental committees.

At each phase we compare the results from boss and candidate measures, and we report the prediction equations for race and gender groups. In this manner, we can observe the effects of both organization and identity groups in shaping candidate selection. Finally, by comparing the results of phases 3 and 4, we can determine what, if any, consequences occur from interveining to balance race and gender perspectives in the selection process.

Table 9 presents the results of stepwise regression analyses predicting program fitness from the management potential dimensions from the perspectives of candidates, bosses, and the two in combination. Independent variables were added to the equation if their capacity to explain additional variance in the dependent variable was significant at the .05 level or less. The first column contains the standardized coefficients for the candidate variables. Oral communication, work standards, and managing differences do not contribute significantly to the explained variance in program fitness but the other seven variables do. For the boss equation in the second column, all ten variables contribute significantly to explaining variance in the dependent variable. In the combined analysis, organizing and planning and work standards do not increase predictive power, but the other eight variables do. Decision-making receives the heaviest weight in the candidate and the combined analyses, but in the boss equation, no independent variable is especially notable in the weight it carries in predicting program fitness. Written communication, flexibility, performance stability, leadership, and social assertiveness explain significant portions of variance in all three equations. For this set of equations one is more impressed with their

TABLE 9.

Stepwise Regression Equations Predicting Program Fitness from
Candidate's, Boss', and Combined Perspectives

(total sample)

n = 223

	<u>Candidate</u>	<u>Boss</u>	<u>Combined</u>
Intercept	0.00	0.00	0.00
	<u>B Values</u>		
ORAL	-	0.07	0.06
WRITTEN	0.10	0.08	0.08
FLEXIBILITY	0.12	0.08	0.09
PERFORMANCE			
STABILITY	0.08	0.08	0.10
DECISION			
MAKING	0.15	0.09	0.21
LEADERSHIP	0.08	0.08	0.08
ORGANIZING			
PLANNING	0.06	0.05	-
WORK			
STANDARDS	-	0.07	-
DIFFERENCES	-	0.08	0.06
ASSERTIVENESS	0.10	0.08	0.07
Multiple R ²	0.47	0.69	0.67
F	28.24	47.17	51.21
d.f.	7,215	10,212	8,214
p	.0001	.0001	.0001

similarities than with their differences, although the boss and the candidate equations are not identical. In terms of the objectives of the intervention, the managing differences dimension does explain variance in program fitness for the boss and combined analyses, although not for the candidate equation. Social assertiveness appears in all three equations.

Table 10 presents the results of combined stepwise regression equations predicting program fitness for each race gender group and for Hispanics. No two equations are close to being identical for any of the groups. Only decision-making has a significant B value for all four race-gender groups, and even for this variable the range of coefficient values is from 0.55 for black men to 0.13 for white women. Written communication and performance stability have significant coefficients for three of the groups. White men and white women have four common variables that predict program fitness; these are written communication, performance stability, decision-making and leadership. Decision-making is one common variable between the black race-gender groups. The reader may recall that this variable had the lowest overall reliability for the total sample and showed a negative validity coefficient for black men (cf. Tables 6 and 7). Overall, one is impressed more by the differences among the equations for the race-gender groups than by their similarities. The differences are greatest between the black race-gender groups and the white race-gender groups and least between the white race gender groups.

Table 11 presents the results of stepwise canonical discriminant analysis for the full sample of candidates identified as IN, ALMOST IN, and OUT by the ad hoc task force. Variables in the analysis include program fitness as well as the ten dimensions of managerial potential because the committee had

TABLE 10.

Stepwise Regression Equations Predicting Combined Measure of Program Fitness
for Race-Gender and Hispanic Groups

	<u>Black Men</u> (n=27)	<u>Black Women</u> (n=33)	<u>White Men</u> (n=56)	<u>White Women</u> (n=63)	<u>Hispanics</u> (n=30)
Intercept	-0.15	0.04	0.13	-0.03	0.02
	<u>B Values</u>				
ORAL	-	0.15	-	0.15	-
WRITTEN	0.15	-	0.14	0.11	-
FLEXIBILITY	-	-	0.12	-	0.22
PERFORMANCE STABILITY	-	0.30	0.10	0.15	-
DECISION MAKING	0.55	0.23	0.28	0.13	-
LEADERSHIP	-	-	0.11	0.21	-
ORGANIZING PLANNING	-	-	-	-	-
WORK STANDARDS	-	-	-	0.10	-
MANAGING DIFFERENCES	0.20	-	-	-	-
ASSERTIVENESS	-	-	-	-	0.32
Multiple R ²	0.65	0.60	0.60	0.75	0.71
F	14.26	14.25	15.03	29.10	32.92
d.f.	3,23	3,29	5,50	6,56	2,27
p	.0001	.0001	.0001	.0001	.0001

TABLE 11.

Stepwise Canonical Discriminant Analysis for Groups CategorizedAs IN, ALMOST IN, and OUT by Selection Committee
(total sample)

Standardized Canonical Coefficients

		<u>Candidate</u>	<u>Boss</u>	<u>Combined</u>
PROGRAM FITNESS		0.97	0.72	0.92
ORAL		0.19	-	-
WRITTEN		-	0.45	0.36
FLEXIBILITY		-	-	-
PERFORMANCE STABILITY		-	-	-
DECISION MAKING		-	-	-
LEADERSHIP		-	-	-
ORGANIZING PLANNING		0.19	-	-
WORK STANDARDS		-	0.10	0.23
MANAGING DIFFERENCES		0.35	0.32	0.38
ASSERTIVENESS		-	-	-
Canonical R ²		0.39	0.32	0.48
F		16.03	11.83	21.19
d.f.		8,434	8,434	8,434
p		0.0001	.0001	.0001
<u>Group Means</u>	<u>n</u>			
IN	91	1.31	1.08	1.57
ALMOST IN	56	-0.20	-0.09	-0.21
OUT	76	-0.72	-0.68	-0.90

program fitness data as well as information on all ten managerial potential dimensions. As expected, ratings of program fitness determined from the interviews contributed most to the discrimination among candidates. Also of interest from the standpoint of the intervention program, managing differences also contributes significantly to the discrimination among the groups of candidates beyond the effects of program fitness. These results indicate that the special committee did allocate candidates based on their standardized program fitness scores and beyond that gave special attention to the dimension of managing differences. We interpret these results as indicating that the ad hoc task force operated as intended by the intervention.

Table 12 presents the results of stepwise canonical discriminant analyses for combined analyses of race and gender groups. Because of sample sizes, we did not compute analyses for race-gender groups but only for race groups and gender groups. Thus, the black sample is independent of the white sample, and the male sample is independent of the female sample. However, the race comparison is not independent of the gender comparison. Again, program fitness is most powerful in discriminating among program categories in all four analyses. Managing differences also plays a significant part in the discrimination for whites, men, and women but not for blacks. Again, we conclude that the results are consistent with what we would expect, if the intervention program were having the intended effects.

The last phase in the selection process was final selection of the candidates in or out of the upward mobility program by departmental committees. These committees received the results of the special committee's decisions along with the raw data used by the committee. Analyses in Tables 13 and 14

TABLE 12.

Stepwise Canonical Discriminant Analysis for Race and Gender GroupsCategorized as IN, ALMOST IN, or OUT by Selection Committees

Standardized Canonical Coefficients

	<u>Black</u> ^(*)	<u>White</u> ^(*)	<u>Men</u> ^(*)	<u>Women</u> ^(*)
PROGRAM FITNESS	0.77	1.07	1.05	0.97
ORAL	-	-	-	-
WRITTEN	0.72	-	-	0.49
FLEXIBILITY	0.32	-	-	-
PERFORMANCE STABILITY	-	-	-	-
DECISION MAKING	-	-	-	-
LEADERSHIP	0.53	-	-	-
ORGANIZING PLANNING	-	0.14	-	-
WORK STANDARDS	-	-	-	0.29
MANAGING DIFFERENCES	-	0.54	0.46	0.34
ASSERTIVENESS	-	-	-	-
Canonical R^2	0.58	0.53	0.44	0.55
F	7.90	19.27	17.57	13.57
d.f.	8,108	6,228	4,206	8,220
p	.0001	.0001	.0001	.0001
<u>Group Means</u>				
IN(n)	1.76(18)	1.74(50)	1.43(39)	1.80(52)
ALMOST IN(n)	-0.58(18)	-0.26(30)	-0.40(29)	-0.12(27)
OUT(n)	-0.88(24)	-1.00(39)	-0.67(39)	-1.15(37)

^(*) Two vectors identified, only the first reported

directly parallel those in Tables 11 and 12. Program fitness carried the most powerful discrimination for the departmental committees just as it did for the special selection committee. However, managing differences no longer contributed significantly to the discrimination of who was in or out of the program beyond the effects of program fitness. Moreover, regardless of whether one observes the total sample analyses or race and gender group analyses, one observes that the canonical R squares, which measure the total discrimination between IN and OUT groups attributable to the eleven variables measured by the interviews, are all lower for the departmental committee analyses than they were for the comparable special selection committee results. The conclusion is that the interview variables had less impact on the decisions of the departmental committees than they did on the special committee. Tables 13 and 14 also have negative canonical coefficients unlike any portion of Tables 11 and 12. The interpretation is that departmental committees selected in people who were weaker on some dimensions of managerial potential than those they selected out. Perhaps of special note in this regard is that the combined analysis for the total sample resulted in negative weight being given to social assertiveness. These findings are consistent with the notion of dialectical conflict between the impulses for change set off by the intervention program and the forces for stability represented by the departmental committees. Tables 16-26, included as appendices, also show the mean values of program fitness and each dimension of managerial potential for the four race-gender groups and the total sample of candidates. These data are consistent with an overall decrease in the effects of the measured variables on the decisions made by the departmental committees.

TABLE 13.

Stepwise Canonical Discriminant Analysis for Groups Categorized AsIN or OUT by Departmental Committees
(total sample)

Standardized Canonical Coefficients

		<u>Candidate</u>	<u>Boss</u>	<u>Combined</u>
PROGRAM FITNESS		1.07	1.34	1.22
ORAL		-	-	-
WRITTEN		-	-	-
FLEXIBILITY		-	-	-
PERFORMANCE STABILITY		-	-0.37	-0.36
DECISION MAKING		-	-	-
LEADERSHIP		0.29	-	0.25
ORGANIZING PLANNING		-	-0.43	-0.26
WORK STANDARDS		-	-	0.27
MANAGING DIFFERENCES		-	-	-
ASSERTIVENESS		-0.33	-	-0.26
Canonical R ²		0.18	0.20	0.27
F		15.96	17.86	13.07
d.f.		3,219	3,219	6,216
p		.0001	.0001	.0001
<u>Group Means</u>	n			
IN	65	0.72	0.77	0.94
OUT	158	-0.30	-.032	-0.38

TABLE 14.

Stepwise Canonical Discriminant Analysis for Race and Gender GroupsCategorized As IN or OUT by Departmental Committees

Standardized Canonical Coefficients

	<u>Black</u>	<u>White</u>	<u>Men</u>	<u>Women</u>
PROGRAM FITNESS	1.19	1.13	1.10	1.18
ORAL	0.34	-0.58	-	-0.39
WRITTEN	-	-	-	0.29
FLEXIBILITY	-	-	-	-
PERFORMANCE STABILITY	-0.61	-	-0.37	-
DECISION MAKING	-	-	-	-
LEADERSHIP	-	0.33	0.37	-
ORGANIZING PLANNING	-0.45	-0.32	-0.53	-
WORK STANDARDS	0.30	-	-	-
MANAGING DIFFERENCES	-	-	-	-
ASSERTIVENESS	-	-	-	-
Canonical R^2	0.46	0.22	0.32	0.26
F	9.36	8.20	12.06	12.97
d.f.	5,54	4,114	4,102	3,112
p	.0001	.0001	.0001	.0001
<u>Group Means</u>				
IN (n)	1.40(18)	0.74(41)	1.14(28)	0.85(37)
OUT (n)	-0.60(42)	-0.39(78)	-0.41(79)	-0.40(79)

Table 14 shows how the department committees treated candidates as a function of where they were placed by the special selection committee. Among blacks there was no change in overall total, but there was an increase of two black women and a decrease in two black men. Among Hispanics there was a decrease of two in the overall total, while there was no change in the other minorities. Among whites there was an overall increase of eleven candidates; of these nine were white women and two were white men. In addition, two white men who had not been selected for the interview process were also added to the program at the final stage.

Overall, the departmental committees served three ways as a conservative force in shaping the characteristics of managers ultimately chosen for the upward mobility program. First, they reduced the degree to which managing differences was a variable discriminating between those who were chosen and those who were not. Second, they increased the degree to which social assertiveness was held against candidates for the program. Third, they increased the proportion of whites in relation to blacks and other minority people who were included in the program. These findings affirm the soundness of the concept of dialectical conflict as an essential element in understanding change and resistance. They also demonstrate the need for independent data and a special selection procedure, if system wide forces that consistently assert predominantly white and male perspectives are to be altered.

Conclusion

This research examined the consequences of interpretations and predictions from intergroup theory on measuring managerial potential and intervening to improve the racial equity of promotion decisions.

In the first section, we found that concepts from the theory added importantly to the explanatory power available from the largely atheoretical studies available in the literature. These effects could be observed both for ratings by organization group members--i.e., bosses and peers--and for ratings by identity group members--i.e., blacks and whites. Group effects could be observed for performance ratings and for promotion decisions. In addition, we also found evidence that these group level effects were operating on the investigators as they collected their data and offered interpretations.

In the second section, we described how concepts from the theory for changing race relations in organization were applied to the problem of improving the racial equity of promotion decisions. Reasoning from the theory we showed how new measurement methods could be created and how innovative selection structure could be established. These change processes aimed to reduce racism by working with resistance by means of dialectical conflict and parallel processes.

In the third section, we observed the empirical results of the new measurement methods and intervention procedures. Taking account of organization and identity group forces, we found varying degrees of convergent and discriminant validity depending on method, trait, and race-gender group. We observed different prediction equations for program fitness as a function of both organization group and identity group analyses. Effects were more noticeably different for identity groups, however, than for organization groups. The results also showed that a special task composed and trained to balance race and gender perspectives had the intended result. In comparison, traditional departmental committees reversed a variety of the forces for change set in motion by the special task force.

Overall, the study shows consistent support for the explanatory and predictive power of intergroup theory for improving the racial equity of managerial assessment and mobility decision-making.

TABLE 15.

Distribution of Race-Gender Group Participation in Upward Mobility Programby Stage of Project

	<u>Black Men</u>	<u>Black Women</u>	<u>White Men</u>	<u>White Women</u>	<u>Hispanics</u>	<u>Other</u>	<u>Totals</u>
<u>Selection Committee</u>							
IN	10	8	14	16	6	2	56
ALMOST IN	7	11	21	29	20	3	91
OUT	10	14	21	18	4	9	76
<u>Department Committees</u>							
IN	8	10	16	25	4	2	65
OUT	19	23	40	38	26	12	158
<u>Change from Selection to Department</u>							
IN to IN	6	6	8	14	4	2	40
ALMOST IN to IN	2	2	5	10	0	0	19
OUT to IN	0	2	3	1	0	0	6
IN to OUT	4	2	6	2	2	0	16
ALMOST IN to OUT	5	9	16	19	20	3	72
OUT to OUT	10	12	18	17	4	9	70

References

- Alderfer, Clayton P. An Intergroup Perspective on Group Dynamics. In Lorsch, Jay (ed.) Handbook of Organizational Behavior. Englewood Cliffs, NJ: Prentice-Hall, 1983
- _____. Changing Race Relations in Organizations: A Comparison of Theories. ONR Technical Report No. 4. New Haven, CT: Yale School of Organization and Management, 1985.
- _____ and Smith, Kenwyn K. Studying Intergroup Relations Embedded in Organizations. Administrative Science Quarterly, 1982, 27, 35-36.
- _____, Alderfer, Charleen J., Tucker, Leota M., and Tucker, Robert C. Diagnosing Race Relations in Management. Journal of Applied Behavioral Science, 1980, 16, 135-166.
- Borman, Walter C. The Rating of Individuals in Organizations: An Alternate Approach. Organizational Behavior and Human Performance, 1974, 12, 105-124.
- Campbell, Donald T. and Fiske, Donald W. Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix. Psychological Bulletin, 1959, 56, 81-105.
- Campbell, John P., Dunnette, Marvin D., Lawler, Edward E., III, and Weick, Karl E. Managerial Behavior Performance and Effectiveness. New York: McGraw-Hill, 1970.
- Davis, George and Watson, Glegg. Black Life in Corporate America. New York: Doubleday: 1982.
- Gordon, Edmund W. and Terrell, Moli Dawn D. The Changed Social Context of Testing. American Psychologist, 1981, 36, 1167-1171.

- Hakel, Milton D., Appelbaum, Loren, Lyness, Karen E., and Moses, Joseph L. Reliable and Impartial Ratings of Management Potential. American Psychological Association Presentation, 1982.
- Huck, James R. and Bray, Douglas W. Management Assessment Center Evaluations and Subsequent Job Performance of White and Black Females. Personnel Psychology, 1976, 29, 13-30.
- Kane, Jeffrey S. and Lawler, Edward E., III. Methods of Peer Assessment. Psychological Bulletin, 1978, 85, 555-586.
- Kraiger, Kurt and Ford, J. Kevin. A Meta-Analysis of Ratee Race Effects in Performance Ratings. Journal of Applied Psychology, 1985, 70, 56-65.
- Landy, Frank J. and Farr, James L. Performance Rating. Psychological Bulletin, 1980, 87, 72-107.
- Levine, Robert A. and Campbell, Donald T. Ethnocentrism. New York, Wiley, 1972.
- Lombardo, Michael M. Looking at Leadership: Some Neglected Issues. Technical Report No. 6: Center for Creative Leadership, 1978.
- McCall, Morgan W. and Kaplan, Robert C. Whatever It Takes: Decision Makers at Work. Englewood Cliffs, NJ: Prentice-Hall, 1985.
- Mintzberg, Henry. The Nature of Managerial Work. New York: Harper & Row, 1973.
- Murphy, Donald. Progress Report on the Black Executive: The Top Spots are Still Elusive. Business Week. February 20, 1984, pp. 104-105.
- Nordlie, Peter G. Proportion of Black and White Army Officers in Command Positions. In Alvarez, Rudolfo and Lutterman, Kenneth G. Discrimination in Organizations. San Francisco, CA: Jossey-Bass, 1979, 158-171.
- Owen, David. Breakdown at Merit Control: The Last Days of the Educational Testing Service. Harpers, 1983, 266, 21-37.

- Quinn, Robert D., Tabor, Joyce M., and Gordon, Laura K. The Decision To Discriminate: A Study of Executive Selection. Ann Arbor, MI: Institute for Social Research, 1966.
- Sarason, Seymour B. Psychology Misdirected. New York: Free Press, 1981.
- Schmitt, Neal and Hill, Thomas E. Sex and Race Composition of Assessment Center Groups as a Determinant of Peer and Assessor Ratings. Journal of Applied Psychology, 1977, 62, 261-264.
- Schmidt, Frank L. and Hunter, John E. Employment Testing: Old Theories and New Research Findings. American Psychologist, 1981, 36, 1128-1137.
- Smith, Kenwyn K. Groups in Conflict: Prisons in Disguise. Dubuque, Iowa: Kendall-Hunt, 1982.
- Smith, P. C. and Kendall, L. M. Retranslation of Expectations: An Approach to the Construction of Unambiguous Anchors for Rating Scales. Journal of Applied Psychology, 1963, 47, 149-155.
- Sumner, W. G. Folkways. New York: Ginn, 1906.
- Taylor, Shelley E. A Categorization Approach to Stereotyping. In Hamilton, David L. (ed.) Cognitive Processes in Stereotyping and Intergroup Behavior. Hillsdale, NJ: Lawrence Erlbaum Associates, 1981, 83-114.
- Tucker, Robert C. Towards a Philosophy of Social Science for Black-White Studies. ONR Technical Report No. 2. New Haven, CT: Yale School of Organization and Management, 1984.

APPENDICES

TABLE 16.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

PROGRAM FITNESS

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	P
IN	2.22	3.00	3.05	2.89	2.79	
ALMOST IN	-1.40	-0.41	-0.35	0.31	-0.19	.0001
OUT	-1.24	-1.39	-0.68	-2.08	-1.33	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	2.32	1.79	1.53	1.71	1.76	.0001
OUT	-0.98	-0.78	-0.09	-0.69	0.55	
TOTALS	0.00	0.00	0.38	0.26	0.21	n.s.

TABLE 17.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

ORAL COMMUNICATION

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	2.62	1.41	2.96	1.96	2.38	
ALMOST IN	-1.72	1.30	1.24	0.46	0.61	.0004
OUT	-1.64	-1.47	-0.84	-1.37	-1.28	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	2.62	2.28	0.43	0.93	1.17	n.s.
OUT	-1.12	-0.77	0.92	0.24	0.05	
TOTALS	-0.01	0.15	0.72	0.44	0.42	n.s.

TABLE 18.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

WRITTEN COMMUNICATION

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	1.61	6.00	2.85	2.17	2.89	
ALMOST IN	-0.40	-2.10	0.24	0.16	-0.23	.0001
OUT	-0.52	-1.95	0.10	-1.49	-0.91	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	-0.50	3.95	0.96	0.53	1.09	n.s.
OUT	0.63	-1.82	0.79	-0.01	0.01	
TOTALS	0.30	-0.07	0.84	0.20	0.37	n.s.

TABLE 19.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

FLEXIBILITY

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	2.45	2.14	2.82	2.33	2.47	
ALMOST IN	-4.26	-1.05	-0.90	0.31	-0.75	.0001
OUT	-0.75	-1.98	-0.91	-0.05	-0.88	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	0.83	0.92	1.72	1.96	1.57	.005
OUT	-1.02	-1.37	-0.65	-0.11	-0.68	
TOTALS	-0.48	-0.67	.024	0.72	0.06	n.s.

TABLE 20.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

PERFORMANCE STABILITY

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	0.03	2.29	2.05	2.49	1.91	
ALMOST IN	-0.25	-0.76	-0.40	3.75	-0.49	<.002
OUT	0.52	-1.11	-0.66	-2.73	-1.02	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	0.84	0.02	0.37	1.49	0.53	n.s.
OUT	-1.51	-0.25	0.01	-0.65	-0.12	
TOTALS	0.14	-0.17	0.12	0.20	.097	n.s.

TABLE 21.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

DECISION MAKING

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	1.26	3.85	2.89	3.05	2.76	
ALMOST IN	-0.30	0.37	-0.08	-0.02	-0.12	.0001
OUT	-0.42	-2.02	-1.11	-1.62	-1.34	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	1.62	1.94	0.35	1.81	1.41	.004
OUT	-0.35	-0.91	0.25	-0.69	-0.37	
TOTALS	0.23	-0.05	0.27	0.30	0.22	n.s.

TABLE 22.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

LEADERSHIP

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	4.06	1.54	3.86	2.82	3.17	
ALMOST IN	-2.10	1.08	-1.35	0.67	-0.17	.0001
OUT	-2.49	-1.91	-0.32	-2.38	-1.61	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	4.61	-0.34	1.78	2.48	2.10	.0001
OUT	-1.89	0.03	-0.23	-1.06	-0.71	
TOTALS	0.03	-0.08	0.34	0.34	0.22	n.s.

TABLE 23.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

ORGANIZING AND PLANNING

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	0.88	3.67	1.94	2.87	2.32	
ALMOST IN	-1.65	1.14	-1.47	-0.74	-0.39	.0002
OUT	1.00	-2.33	0.43	-0.59	-0.76	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	-3.63	1.37	-0.56	1.23	0.11	
OUT	1.91	-0.19	0.36	-0.45	0.24	n.s.
TOTALS	0.27	0.28	0.10	0.21	0.20	n.s.

TABLE 24.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

WORK STANDARDS

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	1.46	2.52	1.47	2.26	1.91	
ALMOST IN	-2.97	-0.74	-0.26	0.03	-0.49	.002
OUT	-1.86	0.73	-1.34	-1.55	-1.02	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	0.65	1.85	0.85	1.26	1.16	.008
OUT	-1.57	0.16	-0.67	0.58	-0.62	
TOTALS	-0.92	0.68	-0.23	0.14	-0.04	n.s.

TABLE 25.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

MANAGING DIFFERENCES

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	2.39	0.71	4.41	4.85	3.52	
ALMOST IN	-2.26	0.05	-0.08	-0.41	-0.43	.0001
OUT	-1.13	-1.53	-1.41	-2.07	-1.58	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
IN	2.10	0.22	1.51	2.10	1.62	.003
OUT	-1.06	-0.75	0.15	-0.63	-0.46	
TOTALS	-0.12	-0.46	0.54	0.45	0.22	n.s.

TABLE 26.

Mean Values for Race Gender Groups in Relation to Upward Mobility Selection

ASSERTIVENESS

	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN	TOTALS	p
IN	1.59	3.83	2.57	3.49	2.88	
ALMOST IN	-1.40	1.91	0.50	-0.16	0.25	.0001
OUT	-1.55	-2.88	-0.91	-0.91	-1.43	
	BLACK MEN	BLACK WOMEN	WHITE MEN	WHITE WOMEN		
In	0.42	1.10	0.07	1.51	0.90	
OUT	-0.67	0.07	0.67	-0.08	0.10	n.s.
TOTALS	-0.35	0.38	0.49	0.55	0.37	n.s.

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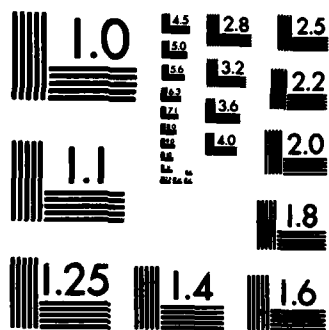
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